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ABSTRACT

This book argues for an adaptation of Forrester's urban dynamics model for evaluating the impact of desegregation on the Seattle public schools. It is suggested that the Forrester modeling scheme may be useful in the definition and the evaluation of desegregation programs in public schools. In particular, the model suggested should be useful in describing the impact of the Seattle school district's desegregation plan for the middle school on various participants in the proposed program. There is a discussion of planned social change along with several definitions of social change. A detailed description is made of the proposed plan of desegregation for the middle school by the Seattle school district. An explanation, with appropriate diagrams, is made of the mechanics involved in implementing the plan. The three variables that serve as indicators of social change in this study, students, teachers, and the black community are explained. Each variable is defined and properties of its measure are indicated. Both advantages and disadvantages of Forrester's urban dynamics model are described in the literature review. Major terms used in modeling are defined. With the use of flow diagrams, a demonstration is made indicating how this model might be used. (Author/AM)

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# A DESIGN FOR DESEGREGATION EVALUATION

by William M. Harris

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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TABLE OF CONTENTS

Page

List of Figures . . . . . 3

Preface . . . . . 5

Chapter One: Planned Social Change . . . . . 7

Chapter Two: The Plan for Desegregation . . . . . .20

Chapter Three: The Model - A Demonstration Case . . .36

Chapter Four: Planning in Perspective . . . . . .55

Bibliography . . . . . .58

## LIST OF FIGURES


| Figure | Page |
|---|---|
| SSD Desegregation Planning Process | 11 |
| Major Events in Middle School Program Development | 24 |
| Organization Chart for School Management | 27 |
| Middle and Junior High School Attendance Areas, Seattle: July, 1971 | 28 |
| System Boundary | 39 |
| Symbol Conventions | 40 |
| The Model | 42 |
| Definitions | 43 |
| Teachers Level | 47 |

This book is dedicated to

the women in my life ---

Cathy, Rolisa and Dana

## PREFACE

This book argues for an adaption of the Urban Dynamics model to evaluate the impact of desegregation in Seattle Public Schools. No extension or significant revision is made to the model. The book was motivated by the black community's demand to know the impact desegregated schools would have on the community. It is hoped that the work will amount to more than an academic exercise. The author's desire is to develop an instrument useful to those working in the field of measuring educational programming. Since the Seattle School District will implement a desegregation program in its Middle School in September 1972, a need exists for the development of an evaluation model to determine some of the changes resultant from the program.

Chapter One is a discussion of planned social change. Some definitions of social change are given. For the purpose of this book, social change is the net result of planned activities of a local agency, the Seattle School District. The net result is a measure of the social conditions, attitudes and practices after enactment of the planned activities. Examples are drawn upon to explain planned social change. The theme is generated about general theories of change with limitations defined appropriate to this study.

In Chapter Two a detailed description is made of the proposed plan of desegregation for the Middle School by the Seattle School District. An explanation, with appropriate diagrams, is made of the mechanics to be involved in implementing the plan. Data required for insertion in the model designed in this book are defined. The three variables that serve as indicators of social change in this study are explained. These indicators are students, teachers, and the black community. Each variable is defined and properties of its measure indicated.

Chapter Three briefly describes Jay W. Forrester's Urban Dynamics. Both advantages and disadvantages are drawn from the literature reviews. Major terms used in modeling are defined. With the use of flow diagrams, a demonstration is made indicating how the Urban Dynamics model might be used for the theme of this book. The latter part of the chapter is an introduction to basic concepts of evaluation and systems analysis.

In the final chapter, Chapter Four, a short discussion is made for the relevance of this study to urban planning. Also, the author expresses the felt appropriate role for blacks in urban planning.

# CHAPTER ONE

## PLANNED SOCIAL CHANGE

The concept of change implies a net difference between two states of activity. That is, a condition taken at some period of time differs from a condition taken at another period of time. Thus an activity "looks different" when observed after a period of time has elapsed. Such variability could be true only if the activity is influenced by forces acting upon it. The notion of forces acting upon an activity brings to mind the theory of system stability or equilibrium.

The Second Law of Thermodynamics theorizes that all of nature tends toward more random processes.[1] Men are creatures of nature. Thus one would suspect that men's activities are characterized by this natural law. In fact, the concept of randomness is extended to societal systems by Etzioni.[2] He argues that all societal systems tend toward entropy - i.e., toward atomization and anarchy. This trend of societal systems, including desegregation programs, toward randomness or entropy, is checked by men's continual investments toward maintaining the levels of integration and organization within the system. This book then, will consider activities of a social nature having stability and equilibrium as working goals. That is, the Seattle School District is working through its proposed desegregation program to put educational programming on a more even keel for all students. Desegregation, it is felt by the district, will more nearly equalize the imbalance of quality educational offerings presently favoring whites.

Before continuing to a discussion of the rates of social change, a few comments are in order as to the complexion given social change theory by this book. In this chapter the intent is to develop a framework for considering the use of the systems approach in societal problems. The purpose is not to derive social change theories. Rather the interest here is to present a case for the notion that social change theory is weak in explaining the complicated real world of societal problems. The chapter's title implies a concern for the application of social change theory.

A second thought should be explained. This book assumes that a definitive boundary can be described for the study area.

Activities occurring within this boundary are influenced by forces both outside and inside the boundary. Those forces acting outside the boundary will be called external inputs; while those acting within the boundary are internal inputs. The results of these forces as they influence the system will be outputs. Most important in understanding the concerns of this book is the fact that no consideration is given, in any analytical way, to the "process" of how these forces influence the system. This book then, deals with a study of social change as opposed to social changing. More will be said in this connection later in the chapter.

The above two comments are intended to put this book in the realm of social change theory application. The book is an exercise in model design. The instrument of evaluation is to be designed for practical application in the black community. Theories not lending themselves to ready application are of little value to oppressed people experiencing daily problems of survival.

Any attempt to measure change must consider the states of an activity over a period of time.

Change occurs. The status quo exists for only an instance. The contention is that all acts of nature and her creatures produce change. A number of theoretical approaches to social change have been developed.[3] Wilbert Moore likens social change to that of organisms in a life cycle. In his explanation of the cyclical theory of social change, Moore concludes that change leads to extinction rather than perfection.[4] Such a theory is supportive of the above-mentioned notion that change tends toward entropy. The rate at which social change takes place is proportional to the forces acting upon the system. A more thorough discussion of systems will be taken up later. The Biesanzs explain six factors influencing the rate at which social change takes place. They are (1) discovery, (2) invention, (3) diffusion, (4) reform, (5) revolution, and (6) planning.[5] The model to be designed will be used to study the impact on various elements within a system due to planned social change.

Planning is an effort to influence the direction activities will take in a system. Planned social change implies a proposal of logically constituted activities that lead to implementation of some goal. For this study the primary force influencing social change is the Seattle School District's desegregation plan to be implemented beginning September 1972. This desegregation plan will be discussed in detail in Chapter Two.

A significant consideration in this study is that no major consideration will be given to factors that influenced the adoption of the Seattle School District desegregation plan. For example, this book will not be a study of the federal and state governmental policies that may have been a party to bringing about the Seattle School District desegregation plan. Also, no major concern will be given the large community role in the development of the final plan. Comments will be restricted to setting a framework for the evaluation model to be designed in this book. The subject of influencing elements leading to the adoption of the Seattle School District desegregation plan is an appropriate topic of study for another book. In the terminology of the ghetto dweller, this book will take as a starting point the instance when the Seattle School District desegregation plan is "laid on them (community)". The concept of centrally planned change is now important.

> Morris argues "that in its ideal state, centrally planned change refers to a significant alteration in a community's state of affairs in accordance with the ends of some central agency that has a capacity to select those ends and the means for their attainment."[6]

In this study, community includes the three major elements of teachers, students and the black community, as bounded by the Garfield High School attendance area. The central agency is the Seattle School District.

Morris goes on to describe the necessary conditions for centrally planned change to exist. First, the agency must be able to carry the plan into effect. Second, the agency must be able to select the ends to be served. The latter point is crucial. For centrally planned change to occur, all the politics of community development must be engaged in by the participants. The prime participants in this study are those involved in the Seattle School District desegregation plan - teachers, students and the black community. The role of the Seattle School District as change agent will be discussed in detail.

This discussion of the change agent borrows heavily from Warren's Truth, Love, and Social Change.[7] The change agent (one or more persons or groups) is one who assists in bringing about change. The idea of 'agent' as one working on another's

behalf has to be extended for this discussion. In addition, it is not a necessary nor sufficient condition that the change agent be a professional person in the usual meaning of the word professional. The relative importance of an issue is essential to the role of the change agent.

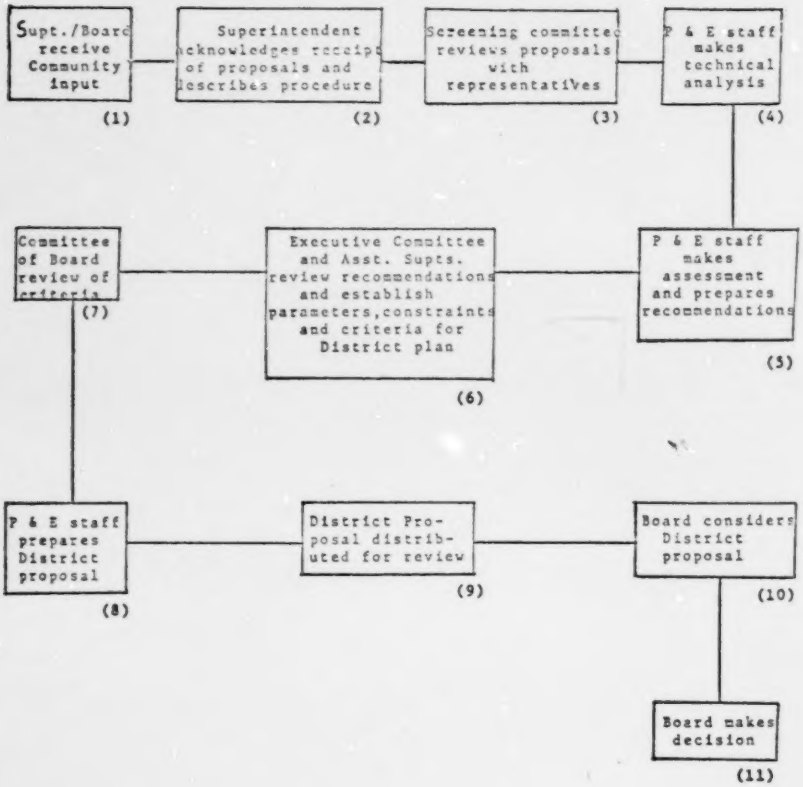
An issue is the topic of consideration among parties in a matter or situation. Two clear areas exist in which an issue may be classified. First there is issue consensus. Under this format the participating parties are in agreement as to the method to be employed in resolving the issue. Issue dissensus, on the other hand, is characterized by refusal of participating parties to agree upon the issue or its resolution. This book, as a study, lies between these two extremes.

The Seattle School District proposed racial desegregation as a significant means of achieving quality education in its public schools for all children. In discussions with the district superintendent of schools, the author was assured that this proposal is based upon a moral commitment to do that which seems humane and right. Factors such as court orders, state and federal mandates and community pressure are also important to the decision. However, the primary consideration in reaching the conclusion to desegregate was that of human dignity and right of equal opportunity for all students. As judged by public response through local school citizen advisory councils, issue consensus exists on this score. However, issue difference exists as to the best means of issue resolution. A number of school citizen advisory councils have submitted proposals for resolution of the issue. The Central Area School Council's proposal appears in the Appendix as the Central Area School Council Proposed Desegregation Plan. Since this book is primarily not a study of this level of issue resolution, except to the extent it may influence the program implementation, it is more appropriate to consider here the idea of changing involved in community development.

This thesis is in agreement with the notion that no workable theory of changing [social] exists. The use of change in this context differs from changing. Change is used to refer to conditions after a period of time has elapsed. Changing, on the other hand, refers to a consideration of incidents while they are in the process of occurring. Theories on social change lack the explanation of mechanics for alteration. "They [social change theories] are suitable for observers of social change, and not of changing."[8] Robert Chin has identified

FIGURE I

SSD Desegregation Planning Process



seven prerequisites for a theory of changing.[9]

1. A theory of changing must include manipulable variables - accessible levers for influencing the direction, tempo, and quality of change and improvement.

2. The variables must not violate the client system's values.

3. The cost of usage cannot be prohibitive.

4. There must be provided a reliable basis of diagnosing the strength and weakness of conditions facing the client system.

5. Phases of intervention must be clear so that the change agent can develop estimates for termination of the relationship.

6. The theory must be communicable to the client system.

7. It must be possible to assess appropriateness of the theory for different client systems.

Since no applicable theory of changing presently exists and since it is not the purpose of this book to develop one, this study will design a method to measure the affects of the changing process. The treatment is similar to that of working with a black box. One is able to apply external stimuli to the box and observe the box's response to the externally applied stimuli. The observation is actually of the output, that which comes out of the box. What goes on inside the box to produce the observable output is not understood. So, too, is the case under study. The Seattle School District does have a definitive community involvement program in its desegregation planning procedure.

The Seattle School District's planning procedure for developing its desegregation program is shown in Figure I - SSD Desegregation Planning Process.[10] Community input was provided primarily from each community school advisory council. Each high school attendance area has an elected citizen

advisory board to the Seattle School District. Each citizen advisory board opts for the educational interest of its respective attendance area to the Seattle School District. The Central Area School Council represents the area defined as the black community in this book. As a result of its request for desegregation plans in November 1971, the Seattle School District received from the area school advisory councils plans or statements of proposed policy regarding the planned desegregation for the fall of 1972. These plans and statements were submitted by the councils in early January 1972. Block 1 of the Figure I denotes this step of the procedure. Blocks 2-8 denote Seattle School District internal administrative review and evaluation of the councils' submitted desegregation proposals. Block 9 again calls for community involvement. At this step of the planning procedure, the community made input to the draft proposal submitted by the Seattle School District as a result of its technical analysis of the councils' proposals. Following these community inputs, the Seattle School District made desired revisions and submitted to the Seattle School Board for approval a recommended plan for desegregation to take place in the fall of 1972.

The planning procedure described above is significant not in the method employed, but rather in the fact that the community is involved in such a major way.

Cunningham argues four basic reasons why citizens seek to serve public education through participation. The citizens' reasons are (1) to develop community understanding and support for educational objectives, (2) to supplement efforts of school staff members in pursuit of educational objectives, (3) to articulate citizen expectations for the school, and (4) to insist on accountability for educational objectives.[11] Black inner-city parents led the fight to enlarge upon this focus of citizen participation.

The powerless sector of American life, blacks and some other racial minorities, recognized the need to become a structured part of the decision-making process in public education. Due to pressure by inner-city residents to achieve community control of the schools serving their children, many major city school districts have inaugurated various degrees of decentralization.[12] Inner-city residents have failed in their attempt to achieve community control. Much has been written about the Oceanhill-Brownsville struggle by black parents. Rather, the white education power elite has responded, as settlement for community control demands, with the

practice of decentralization.[13] This white power elite has been limited more to those working in public school education. For example, the local government has had only minimum involvement in attempting to influence the direction of decentralization. Of course, this does not exclude the role that may have been played by public officials as individuals behind the scene. Public school system decentralization has been the most radical change in school administration since the decision to go to the junior high school structure several decades ago. It is significant that the minority community was the initiator of this change.

Twenty years ago, black parents supported the "hostage" theory of public education. The hostage theory, actually a political technique, called for massive integration of white and minority students. Blacks reasoned that if black children shared the same educational facilities, on an equal basis, with white children, quality education would result for their children. The strategy failed to produce expected results. Kenneth Clark speaks to the new emphasis by black parents to gain quality in education for their children.

> The suggested shift in emphasis from desegregation to quality of education is not a retreat into the blind alley of accepting racial separation as advocated by the Negro nationalist groups. Nor is it the acceptance of defeat in the battle for desegregation. It is rather a regrouping of forces, a shift in battle plans and an attempt to determine the most vulnerable flanks of the opposition as the basis for major attack. The resisting educational bureaucracies, their professional staffs, and the segment of the white public which has not yet been infected fatally by the American racist disease are most vulnerable to attach on the issue of the inferior quality of education found in Negro schools and the need to institute a plan immediately to raise the educational level of these schools.[14]

The cry for control of education in Seattle has been far less dramatic than that of New York's Oceanhill-Brownsville.

In fact, it seems to the author, decentralization appears to meet with the approval of the majority of the minority community in Seattle. Seattle has witnessed considerable increase in citizen participation in education at the advisory level. The school board retains all power and authority for most meaningful decision-making activities.

In a discussion of social change it is important to consider indicators of social change. The assertion can be made that all social change does not occur at the same rate. Indeed if this is true, then there must be factors influencing the rate of social change. An indicator of social change must have three characteristics. First, the indicator must have magnitude. That is, the indicator must have a dimension of some measurable size. Of course accuracy of measurement is limited to instruments used in the experiment. A second characteristic of an indicator of social change is that of time. One must be able to express the measured indication over time. The most simple means of making such a measurement is to take the difference between like quantities, same units of measurement, observed at different times. Third, an indicator must have direction. Direction is a measure of the change agent's bias. The measures of social change, indicators, will vary depending upon the person or institution observing the change. Much care is required in determining the social indicators most suitable to describing a particular activity.[15]

As a conclusion to this chapter, a brief discussion of some of the factors influencing social change rates is needed. The basis for the discussion is the conceptualization of Hagen.[16] Even though the world is undergoing rapid social change, social scientists know very little about the forces that cause the process of change and govern its course. Hagen lists two primary causes for this ignorance on the part of social scientists.

First, social change processes are exceedingly complex. The degree of complexity can be generally compared with that of the study of nature in physical sciences. Time has witnessed the development of tested techniques of experimentation, facts supported by data and predictive models in the physical sciences. For example, many of nature's activities can be predicted when certain variables are known. Periodically repeated experiments, rigorously planned and designed with respect to standardized concepts, scales and techniques, have made for an assessment and measurement of the influence of forces acting on a system. Having worked on complex problems both as a physical and social scientist, the author has found

that the problem of describing physical nature to be almost trivial in comparison to those in social areas. The element of people's interacting with each other in highly irregular fashion is the complicating factor. In dealing with, or attempting to study people, reaction characteristics are a function of culture, personality, external and internal stress conditions and numerous other factors. In order to understand more fully the process of social change, the social scientist's challenge is to develop a highly reliable, predictive model of peoples interactions.

Second, until recently the major social sciences, such as anthropology, sociology, and psychology have not made a unified effort. Hagen argues that a great need exists for integration, partially accomplished through political science's study of social behavior, of the three. Through the effort to integrate the disciplines significant accomplishments in method and content will be realized.

Hagen's consideration of indicators influencing social change rates is primarily from an economic frame of reference. Thus, the author has at least some degree of difficulty in attempting to make analogies to the theme of this book. The intent is not to minimize the importance of economic welfare to the black inner-city dweller. A more immediate problem for the black social poor is to gain control of economic forces influencing their lives.[17] Control is acquired through political processes. It is significant that black ghetto dwellers have primarily sought to achieve self-determination as the means to quality education for their children.

The most challenging struggle for the Central Area School Council has been that of acquiring and maintaining political power in Seattle. The Council has not requested large sums of money; rather it has sought control of funding available to central region schools. The Council has moved by political means to gain authority to select and release staff, to define and institute in central region schools relevant curriculum, and to structure the organization of its schools. A worthy investigation would be one to determine the social and cultural factors influencing the growth characteristics of the Central Area School Council. Interesting comparisons might be made between an American inner-city institution and some of the developing nations discussed by Hagen in his economic growth model.

The concentration of leadership, argues Hagen, is an important factor influencing the rate of social change. Hagen

points to several societies (that of Japan, Columbia and Wales) where leadership spurring economic growth came from the "group lacking complete acceptance in the society". Blacks, psychologically at least, find themselves as outsiders in white racist America. It has been pointed out that blacks led the movement to gain control of educational facilities and curriculum programming at the community level. More important, blacks are the leaders in attempting to make schools more humane and responsive to the needs of children. This point is made without contention. If white America wanted humane schools, it has the power (political, social and economic) to make such schools a realization.

In the next chapter a detailed discussion is made of the Seattle School District's proposed desegregation plan, designed to become operational in the fall of 1972.

## CHAPTER ONE

### FOOTNOTES

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4. Wilbert E. Moore, Social Change, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1963. An ingenious scheme of the various cyclical theories of social change is given on p. 38.

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10. Courtesy of the Seattle School District No. 1, Department of Planning and Evaluation, Revised 12-7-71.

11. Luvern L. Cunningham, "Community Involvement in Change", Educational Leadership, Vol. XXVII, January 1970, pp. 363-366.

12. "Decentralization and Community Involvement in Local School Systems", NEA Research Bulletin, Vol. 48, No. 1, March 1970, pp. 3-6.

13. Decentralization is an administrative method in which the central authority delegates functional responsibility and very limited decision-making power to officials of sub-regions of the school district, each of whom administers schools in a defined geographic area. Community control differs in the amount of power shared by the local group. The local group would approximate those duties and authorities of the existing district school board.

14. Kenneth B. Clark, Dark Ghetto: Dilemmas of Social Power, Harper and Row, New York, 1965, p. 42.

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16. Everett E. Hagen, On the Theory of Social Change, The Dorsey Press, Inc., Homewood, Illinois, 1967, pp. 12-35.

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17. William M. Harris, Sr., "The Role of the Political Economy in Minority (Black) Communities", Paper delivered at the Conference on Black Education and Politics, Washington State University-Pullman, April 1972, p. 2.

## CHAPTER TWO

## THE PLAN FOR DESEGREGATION

This chapter is an abstraction of two sources of material and information. First, the Seattle School District has supplied much information about its Middle School desegregation proposal designed for implementation in the fall of 1972. Second, the Western Region School Desegregation Projects[1], Riverside, California, provided information useful in evaluating desegregated schools.

The public frequently uses the words integration and desegregation interchangeably. In fact the two words have different meanings. In its simplest form desegregation is the mixing of students of various [racial] groups. This consideration of inter-racial mixing has been the focal point for most of the political activity by action groups to either prevent or make secure educational facilities serving students on a multi-racial basis.

Integration is more comprehensive. Jane R. Mercer, Director of the Western Regional Desegregation Projects, has summarized the characteristics of an integrated school system.

1. The average performance of students from all ethnic groups will approach or exceed the national norms for the tests. The academic achievement of minority youngsters shall be improved so that the distribution of their academic achievement scores will be similar to all other students in their classrooms without a concomitant negative effect on the achievement of the majority students.

2. Minority and majority students shall become structurally integrated into the social system of the school so that they hold comparable statuses and play comparable roles in that system to those held by all other students. Specifically, this means that minority children and all other

children perceive each other as friends and that the distribution of statuses and roles in the social system be similar for all groups.

3. There shall be integration of minority and majority educators throughout the staff of the schools of the district so that the opportunity structure of the district is open equally to minority and majority educators. This implies that educators from minority groups shall be recruited to the system and will hold statuses and roles at all levels of the school hierarchy.

4. Minority and majority parents shall be structurally integrated into the life of the school so that they hold statuses and play roles in school related organizations which are comparable.

5. Attitudes toward self shall become equally positive in all groups.

6. Motivation for school and academic achievement shall become equally positive in all groups.

7. Curriculum materials shall be available so that each child has an opportunity to understand and to develop pride in his own ethnic heritage and to understand and respect the ethnic heritage of other groups in the classroom and in American society.

8. Teacher attitudes and teaching procedures shall be developed so that each child has an opportunity to understand and to develop pride in his own ethnic heritage and to understand and respect the ethnic heritage of other groups in the classroon and in American society.[2]

Mercer's program guidelines describe what integration in public schools should be. The goal of desegregation is integration.

This book is concerned with the proposed desegregation of Seattle's Middle Schools. Figure 2, Major Events in Middle School Program Development, depicts the school district's planning scheme to ensure implementation by the fall of 1972.[3]

The Seattle Board has indicated as its rationale for desegregation of schools: (1) federal-state judicial rulings concerning school segregation; (2) federal-state legislative actions concerning school segregation; (3) historical policies and commitments of the Board to end school segregation and to provide equal educational opportunities for all children; (4) recognition of growing racial and ethnic imbalance in the District's schools; (5) documented negative effects of school segregation on the growth and development of children; and (6) documented negative effects of school segregation on educational achievement and learning of children.[4]

In order to justify the rationale for desegregation and to relate its goal of full integration to implementation programs, the Seattle School District developed program objectives for the Middle Schools. "The development of well-defined, measurable objectives is a crucial aspect of evaluation. A performance objective must be both measurable and observable."[5] Good, well-stated performance objectives define the level or rate at which a process should operate. While this book is not concerned with measuring the effectiveness of how well developed the Middle School objectives are, it is vital to list these program objectives. The Middle School program objectives are:

1. Concepts of Self and Human Relationships

   The Middle School identifies with important self and human needs of the children and adults by stimulating progress in awareness, sensitivity, individuality, and in cooperative behavior appropriate at this level of pupil maturity. These outcomes include:

   a. A consciousness of past successes and the expectation of future success.

b. An awareness of practically inexhaustible potential, coupled with a realistic assessment of the kinds and degrees of achievement that are probable.

c. A recognition that personal success depends partly on the help and cooperation of others.

d. An acceptance of the principle that personal gratification is not to be sought through exploitation of others but may include legitimate competition.

e. Self pride based on self knowledge rather than on a destructive view of others.

f. The ability to examine one's own feelings, values, capabilities, and shortcomings when interacting with individuals or groups.

g. The ability to demonstrate a sensitivity to the needs, problems and aspirations of individuals and groups while respecting the dignity and worth of each human being.

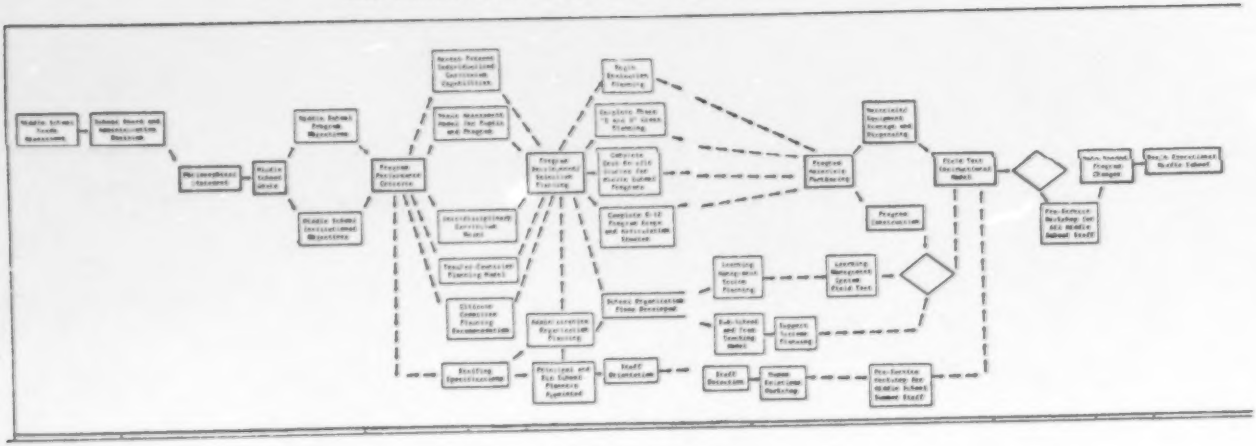
h. The ability to assume individual responsibility for abiding by mutually agreed-upon decisions, societal norms, etc.

i. The ability to resolve conflict and differences through compromise or adjustment.

j. The ability to participate actively in group roles (leader or follower) as such roles are needed for the group to progress.

FIGURE 2

MAJOR EVENTS IN MIDDLE SCHOOL PROGRAM DEVELOPMENT[4]



◇ Denotes decision point

2. Knowledge and Skills

The Middle School provides academic and practical experiences for children that regularly result in measurable growth in their acquisition of knowledge, skills, and attitudes that are important to their present and future well being, such as those needed to:

a. Work in a variety of occupations.

b. Succeed in the tasks of higher learning.

c. Engage in further self-directed learning.

d. Achieve intellectual and aesthetic satisfactions.

e. Carry out social responsibilities.

f. Maintain mental and physical health.

g. Think critically.

h. Use leisure time constructively.

3. Relationship to Environment

The Middle School provides academic and practical experiences for children that regularly result in measurable growth in their attainment of norms by which they may judge the quality of their environment, including:

a. An awareness of man's dependence on elements of the natural environment for the satisfaction of practical and aesthetic needs.

b. An awareness of ways in which human behavior can damage the natural environment or make it better for human life.

c. A critical awareness of that part of the environment that is created by societies and individuals.

d. A recognition that each person is himself a part of the environment, and a responsible agent of change in it.

e. An understanding of the principle that each element of the total environment interacts with all the others.

4. Institutional Objectives

Use of resources for individualized learning:

The Middle School uses its personnel, facilities, time, and materials, and those of the community, in combinations that are appropriate to the needs of individual children for meeting their objectives.

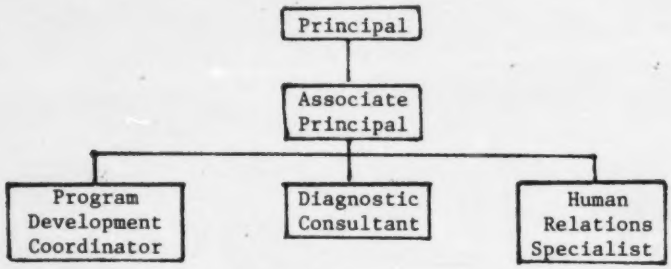
Evaluation and Change:

The Middle School program includes means for constant or periodic evaluation of the efficiency with which objectives are met, as well as effective means for constant program revision in response to evaluation.[6]

The school district charged the Middle School staff with the responsibility of selecting and developing the manner in which the program objectives would be implemented. District central staff would assist and advise in the development insuring efficiency of operation.

Teachers were directed to develop curriculum relevant to the Middle School based upon a matrix composed of the traditional areas of human knowledge (English, language arts, science and social science) and nine themes of contemporary education (communication, problem solving, social-political-economic systems, human systems, ecological systems, technology, personal issues, career values, and man and his materials). Each theme was defined for content.

Each educational complex within the Middle School was deployed for school management as shown in Figure 3, Organization Chart for School Management, below:




Management systems in learning, student involvement, and staff development were defined.[7]

The final area of concern regarding the desegregation plan is that of logistics. The plan calls for the involvement of 842 students to be mandatorily bussed between the Lincoln, Roosevelt and Garfield attendance areas. The logistical summary of the plan is given below.[8] (See Figure 4, Middle and Junior High School Attendance Areas, July 1971)

LINCOLN - ROOSEVELT AREA

1. Eckstein, Hamilton and Wilson will be grades 6-8 middle schools.

2. Elementary feeders (K-5) to Eckstein in 1972-73 will be Bryant, Fairview, Laurelhurst, Ravenna, Sandpoint, University Heights, and View Ridge. Elementary feeders (K-5) to Hamilton in 1972-73 will be Day, Green Lake, Latona, and McDonald. Elementary feeders (K-5) to Wilson in 1972-73 will be Allen, Bagley, Oak Lake, and Olympic View.

3. Marshall will be grades 9-12 satellite of Roosevelt.

4. Marshall 1971-72 grade 7 (1972-73 grade 8) students will be equally distributed between Eckstein and Hamilton. Current seventh grade students at Hamilton will attend Hamilton in the eighth grades in 1972-73.

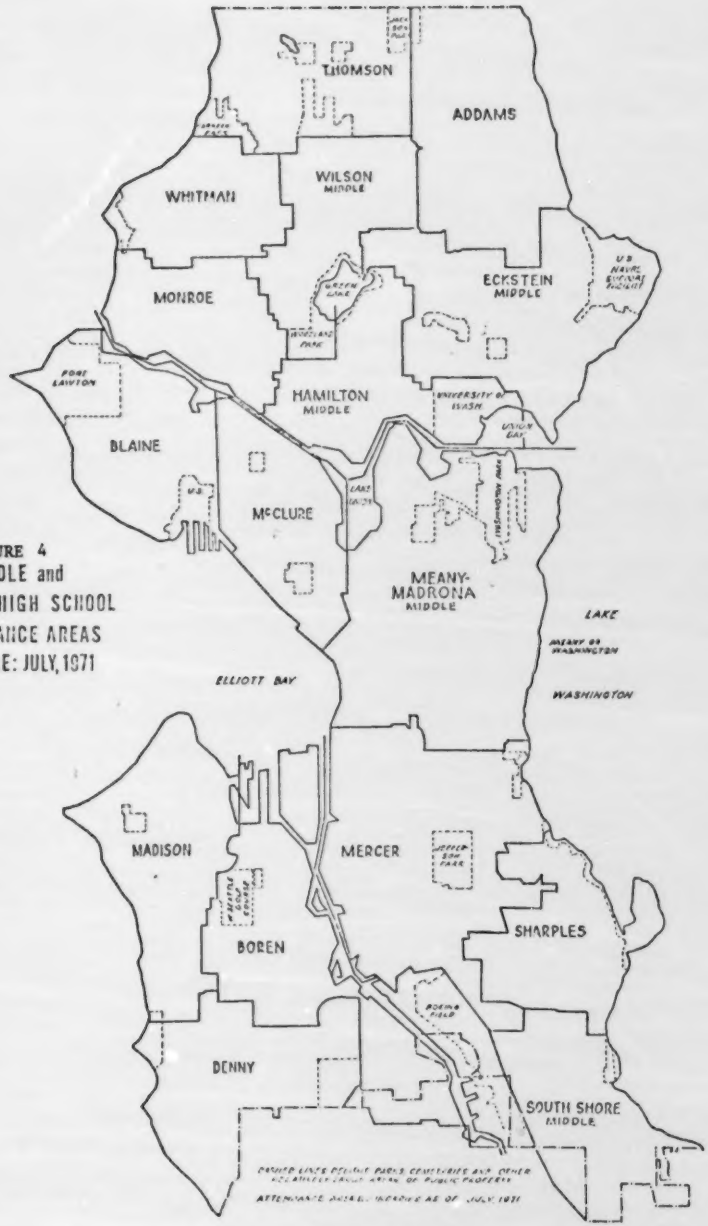



FIGURE 4
MIDDLE and
JUNIOR HIGH SCHOOL
ATTENDANCE AREAS
SEATTLE: JULY, 1971


30

5. Interlake will be a 9-12 satellite of Lincoln. Grade 6-8 students from the Interlake attendance area will attend Hamilton.

6. All elementary feeders will be K-5.

7. Students (K-5) from Interlake will be distributed between Day, Latona, and McDonald.

8. Sufficient white students will be exchanged with black students from Madrona and Meany to reduce the black percentage at Madrona and Meany below 25 percent. Black percentage at Eckstein, Hamilton, and Wilson will be above 15 percent.

9. Current Wilson and Hamilton eighth grade students will attend Lincoln-Interlake in grade 9 and current eighth grade students at Marshall and Eckstein will attend Roosevelt-Marshall in grade 9.

10. Fifth grade white transfers from selected schools in the Eckstein, Hamilton and Wilson areas will be used to achieve racial balance in Madrona (grade 5). In 1972-73, sufficient white students from the fifth grades of Bryant, Laurelhurst, Sandpoint, University Heights, Day, McDonald, Bagley, and Olympic View will be assigned to Madrona to achieve the requisite racial balance (25 percent black) in the fifth grade of Madrona. Each school will have a corresponding number of black students assigned from Madrona (grade 6) and Meany (grades 7-8) to achieve racial balance (25 percent black students assigned to Eckstein, Hamilton, and Wilson from Madrona and Meany in 1972-73). Students residing in the other feeder attendance areas to Eckstein, Hamilton, and Wilson will not be assigned to Madrona or Meany in 1972-73. However, residence in attendance areas of these schools, Fairview, Ravenna, View Ridge, Green Lake, Latona, Allan, and Bagley, may be a criterion for racial balance assignments in the following year.

CENTRAL AREA

1. Meany will be a grades 7-8 middle school. Madrona will be a grades 5-6 middle school component of the Meany-Madrona grades 5-8 middle school complex where Leschi,

Lowell, McGilvra, Minor, Montlake, Seward and Stevens will be K-4 feeders to Madrona which along with Colman and Gatzert will feed Meany.

2. Meany in turn will feed the Garfield-Washington grades 9-12 complex. Harrison will remain a K-2 primary school. Colman and Gatzert will remain K-7 feeders to Meany.

3. Students residing in the previous Mann, Madrona, and Summit elementary school attendance areas will be considered in any of racial balance pupil assignment patterns.

Having described in some detail the proposed plan for the desegregation of the Seattle School District's Middle Schools, the remainder of this chapter will discuss information required as input to the evaluation model. However, it is appropriate to discuss briefly the results of evaluations made in the past.

Since 1954 the nation has again and again made policy statements of commitment to racial integration of public schools. Recently the Research and Policy Committee of the Committee for Economic Development concluded:

> Racial integration remains basic to the more complex solutions to urban education dilemmas. School integration is of critical importance for the quality and equality of education as well as for social relationships. We urge that top priority be given to school integration and that financial incentives be offered to districts which make clear progress toward desegregation.[9]

The national political problem for nearly two decades has been how such a policy should be implemented. Attempts at solutions of implementation have traditionally taken physical forms. Mandatory bussing of black and white students is the most recent physical proposal to achieve racial balance in urban schools. It is the position of this book that white racism has been, and continues to be, the detriment to realizing a solution to school integration.

Several recent studies to determine the effects of integration upon school children have concluded:

1. There was no evidence of any general effect of the presence of Negro [black] students on the academic achievement of non-Negro pupils.[10]

2. The contention that school desegregation in the South has adversely affected Caucasian students' affinity for school was generally not corroborated by the findings of the present study.[11]

3. At the present time the data seem to indicate that: achievement and measured IQ improve with length of time integrated [for minority students].[12]

Finally, it is significant that no reported research has dealt with the real issue - white racism as an influence in halting desegregation of public schools.

As an introduction to the discussion of identifying evaluation model inputs, it is of value to call out several guidelines mentioned by Pettigrew. They are:

1. Never base final judgments on the absolute percentages of one or two items on a few surveys.

2. Remember always to interpret survey data within their social contexts.

3. Recall that even deeply held opinions are subject to change with the occurrence of particular dramatic events.

4. Some opinions are subject to wide, cyclical swings and require repeated surveys over a number of critical years in order to interpret correctly.

5. Widespread hostility to social change does not necessarily mean that there will be mass resistance to the change once it is introduced. This is especially true when there is a solid

minority who favor and press for the change, when the initiator of the change is firm and unwavering, and when there is a widespread belief that the change is inevitable.

6. Once an accomplished fact, the change will generate its own support.[13]

Inputs are those elements of information which are processed for evaluative purposes.[14] This book defines four basic inputs to social change. Input categories are the Middle School desegregation plan, teachers, students and the black community. Social change for the purposes of this study is the net effect of the inputs on the system defined in Chapter Three. Following is a definition of each input.

The Middle School desegregation plan was described earlier in the chapter.

The teacher input is the classroom staff within each component of the four Middle School facilities. Teachers are those having responsibility for contact with the student in a planned learning setting. This group includes both certified and paraprofessional personnel. Excluded are administrative and counseling staffs.

The students' input is the 842 children involved in the mandatory bussing portion of the desegregation plan.

The black community input is the parents of the black students in the student input category. The black community is bounded by the Garfield High School attendance area.

An immediate problem becomes the measuring of the major categories. Indicators are defined as a measure of each category. The purpose of an indicator is to provide a convenient surrogate that measures movement toward or away from a goal over a period of time. An indicator is a performance characteristic associated with the status of activities or the delivery in terms of a program of services. It is an observed value that measures the activity or service.[15]

Indicators of the teacher input are training programs, change in professional role, and job satisfaction. A measure of the quality of the human relations training program is the observed behavioral change demonstrated by the teaching staff toward students, parents, and the program. Changes in the professional role of the classroom teacher are indicated by level of involvement in curriculum development, decision-making and staff selection. The major measure of teacher job

satisfaction is the rate of turnover and feedback from the black community. Indicators of the black community input are parent participation, institutional authority and satisfaction. Parent participation is measured in terms of involvement in PTA roles, advisory committees, and program evaluations (complaints, recommendations, etc.). Black parent institutional authority is indicated by their role in teaching, decision-making, and staff and student selection. The best measure of black parent satisfaction is the observable support or non-support of the school programs.

In the next chapter a simple, brief case study, using the teacher input, will be employed to describe the workings of the Forrester model.

## CHAPTER TWO

## FOOTNOTES

1. The Riverside School Desegregation Study is a joint project of the Riverside Unified School District and the University of California, Riverside, approved by the Riverside Board of Education. All research plans are discussed at regular meetings of the project executive committee which consists of representatives from the city schools and the University. A Citizen's Advisory Group has assisted the study.

2. "Evaluation Program for Assessing the Extent of Integration in Desegregated Schools", proposed by Jane R. Mercer (unpublished).

3. The Middle School desegregation program has been in operation during the 1971-72 school year on a voluntary basis. A local citizens' activist group, Committee Against Mandatory Bussing, achieved a court injunction to implementing the proposed plan for 1971-72. In April 1972, the State [Washington] Supreme Court struck down the injunction.

4. Preliminary Design and Documentation for Phase II Desegregation in Seattle Public Schools, Department of Planning and Evaluation, Seattle Public Schools, July 28, 1971, p. 3.

   An excellent summary of documented research to support items 5 and 6 in the rationale statement is given by James A. Banks in Black Self-Concept, Implications for Education and Social Science, Edited by James A. Banks and Jean D. Grambs, McGraw-Hall Book Co., New York, 1972, pp. 5-36.

5. A. J. Manneback and Floyd L. McKinney, "Performance Objectives: Foundation for Evaluation", The Agricultural Education Magazine, Vol. 42, No. 12, June 1970, p. 301.

6. Middle School, A Planning Folder, pp. 26-57.

7. Ibid, pp. 45-49.

8. Ibid, pp. 1-2.

9. Education for the Urban Disadvantaged: From Preschool to Employment, A statement by the Research and Policy Committee, Committee for Economic Development, New York, March 1971, p. 29.

10. Bonnie Todd Scudder and Stephen G. Jurs, "Do Bussed Negro Children Affect Achievement on Non-Negro Children?", Integrated Education: Race and Schools, Vol. 9, No. 2, March/April 1971, p. 34.

11. Robert L. Williams and Fred Venditti, "Effect of Academic Desegregation on Southern White Students Expressed Satisfaction with Schools", The Journal of Negro Education, Vol. 38, No. 4, February 1969, p. 340.

12. Dan A. White, "Effects of Bussing on Urban School Students", Educational Leadership, Vol. 29, No. 3, December 1971, p. 257.

13. Thomas F. Pettigrew, "Public Policy and Desegregation Research", Integrated Education: Race and Schools, Vol. 10, No. 1, January/February 1972, p. 22.

14. Jeff A. Pyatte, "Functions of Program Evaluation and Evaluation Models in Education", The High School Journal, Vol. 53, No. 7, April 1970, p. 387.

15. Kenneth J. Dueker, "Urban Information Systems and Urban Indicators", Urban Affairs Quarterly, Vol. 6, No. 2, December 1970, pp. 174-175.

## CHAPTER THREE

## THE MODEL - A DEMONSTRATION CASE

In this chapter the discussion will concern concepts of systems analysis and dynamic modeling. A simple example will be developed using the concepts and techniques of the Forrester model for urban dynamics. Comments will be made about the strengths and weaknesses of the model in its application to this study. Modeling concepts and techniques are abbreviations of those found in Urban Dynamics.[1]

The theme of this book is that the Forrester modeling scheme may be useful in the definition and the evaluation of desegregation programs in public schools. In particular, this book is an adaptation of the Forrester model of urban dynamics as an evaluation tool that would be helpful in describing the impact of the Seattle School District's desegregation plan for the Middle School on various participants in the proposed program. The impact of the program, desegregation of the Middle School, on the teachers involved, the students being bussed, and the black community is defined as social change. Certainly other factors influence the amount of social change resultant from desegregation, but for the purposes of this book, two assumptions are made.

First, the three variables defined in Chapter Two (teachers, students, black community) are adequate to provide information to the community and administrators about important facets of the program's impact. In making decisions to revise or extend the program, it is significant to have information about the program's impact upon those receiving the services. The program's primary client is the student. The parent is an indirect client who serves as one of the essential gauges to the success of the program. Teachers serve the client groups. However, program success is most dependent upon this group for overall success of operation. It is these three groups that are best indicators of the program's success or failure.

Second, the consideration of a large number of variables is beyond the scope of this study. The model to be designed will be sufficiently general that extension to many variables can be accomplished. However, increasing the size of a model

increases the data base necessary to implement a model and subsequently the management cost of development as measured in time. A primary interest here is not to show how to develop a complicated model, but to demonstrate the potential for simple models to examine social change.

There are two major reasons the Forrester model has been chosen:

1. The Forrester model is a design to relate the cause and effect relationship between variables within a system. The model ties these complex inter-relationships into a logical network.

2. The Forrester model, with data inserted, when operating through a computer simulation permits one to determine the most sensitive variables influencing the various relationships.

Dyer argues for the need to develop a system to measure the performance of educational systems. He says the need,

> ...is to arrive at a method of wrapping up these kinds [performance indicators] of information into a set of numbers that describe the performance of an educational system in a manner that avoids all the mistaken assumptions and statistical pitfalls that have fouled up system assessment in the past and is proof against possible misinterpretation by educational policymakers and the public.[2]

To meet such a challenge is beyond the ambition of this study. Nevertheless, the need exists to begin a well-designed system of evaluation.

Having set the stage, attention is now turned to a consideration of the systems approach advanced by Jay W. Forrester of the Massachusetts Institute of Technology.[3] The word "model" has been used without definition. Simply, a model is a way of representing a system. It is the abstraction of a real situation or thing. In addition, the primary concern of this book is a model that describes a sequence of action and reaction. Such a dynamic model is called a simulation. Raser quotes Sidny Verba's definition of simulation:

> A simulation is a model of a system. Other models...may attempt to represent a system

> through verbal means, mathematical means, or pictorial means. Like simulations, they involve the abstraction of certain aspects of the system one is studying and an attempt to replicate these aspects by other means such as words or mathematical symbols. But the simulation model differs in that it is an operating model. Once the variables that have been selected are given values within the simulation and the relations among the variables are specified, the model is allowed to operate. It may operate through the interaction of people who play roles within the model; or it may operate on a computer. The rules given to the human participants in the simulation or the computer program represent the premises of the model. Its operation produces the implications.[4]

Figure 6, Symbol Conventions, defines the symbols used in this discussion. It is instructive to draw common analogies for the symbols. The source may be thought of as a waterfall that feeds a lake below. The symbol used for the source is an irregularly shaped, closed path. The level, represented by a rectangle, may be likened to the lake. It is the reservoir or receiver of water from the falls. Rates, represented by valve symbols, may be thought of as dams controlling the rate at which water enters and leaves the lake. Thus, the "valves" or dams may be regulated to permit the flow of water to or from the lake as so many volume units per time units. A circle is used to represent an auxiliary variable. For example, auxiliary variables would influence the rate at which water entered or left the lake. Auxiliary variables might be the shape or size of spillways that affects the amount of water permitted in the lake. Auxiliary variables are called multipliers and these affect rates or levels; for example, the level in the lake is affected by evaporation ratios. Finally, external inputs are those forces over which the system has no control. External input is represented by a small circle with a crossed-arrow attached. Rain is an example for our water system.

Broken lines ending in arrowheads are drawn from one symbol to another to indicate a relationship between the two. This point will be discussed in more detail. The above discussion is repeated below in more technical terms.

To facilitate the following discussion, it is of value to define some terms to be used. A system is something made up

of inter-related parts. Operationally speaking, a system is something that can be manipulated in some fashion to produce something.

Systems may be open or closed. In an open system the inputs are independent of the observed outputs. The past does not dictate the future. A closed system contains a feedback mechanism. Past actions impact upon future responses. A negative feedback is goal seeking; that is, the causes of system fluctuation and instability are sought out.

A boundary defines the area which the system encompasses. Figure 5, System Boundary, pictures the concept. While in theory nothing within the system penetrates the boundary, in fact it is more difficult to completely isolate a system. For this book, the system is defined as the teachers, students and black community.

Figure 5: SYSTEM BOUNDARY

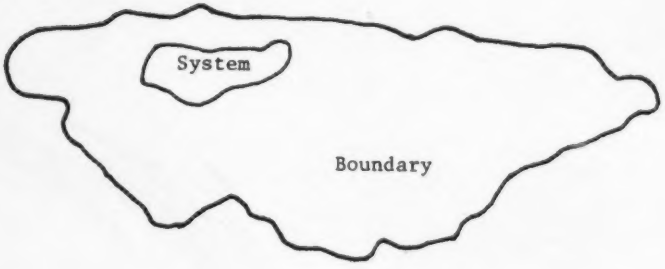


FIGURE 6

SYMBOL CONVENTIONS

| NAME | SYMBOL |
| --- | --- |
| SOURCE | |
| LEVEL | |
| RATE | |
| AUXILIARY VARIABLE | |
| EXTERNAL INPUT | |

The feedback loop consists of level and rate substructures. A level is a variable that describes a condition of the system at a given time. In this book, students, teachers and the black community make up the levels. The rate substructure is a measure of how rapidly the levels are changing. The rate equations are the policy guidelines established by the school district to implement the desegregation plan. Forrester's models make great use of mathematical equations to express relationships among variables. Mathematical equations are not presented in this book; rather, a verbal description is made to explain the model's behavior. Only level variables can feed information to rate variables. In the system structure, rate and level variables must alternate along a path. Since it is difficult to distinguish between levels and rates, it is advised that the system be considered to be at rest. At rest, the system exerts no action and the rate variables (action variables) disappear. Only level variables remain when the system is brought to rest.

Auxiliary variables are essentially components of rate equations that have been subdivided and separated to express concepts of independent meaning. Auxiliary variables make up information channels between levels and rates and are represented by large circles. Auxiliary variables values may not only be derived from equations but also from tables.

Stagner recognizes that "it is possible to represent the city as a system characterized by a feedback loop involving human efforts..."[5] In this light, an example of the dynamic model will be built. To achieve this task it is necessary to identify the system, its boundary and the levels and rates that will characterize the system's behavior. In the analysis of a complex system it is often convenient to fragment the system for easier observation.

To demonstrate this approach, Figure 7, The Model, will be discussed. See Figure 8, Definitions, for the meaning of each item named in the model structure. For an explanation of the model, the teachers level will be isolated.

Figure 9, Teacher Level, shows that four variables generate the teacher level. The variables are teachers' professional role, job satisfaction, parent complaints of the program and student achievement. The explanation below describes how this was developed.

The rectangle, level, containing teachers, represents the total number of teaching staff members in the Middle School.

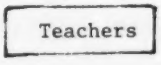


FIGURE 7: THE MODEL

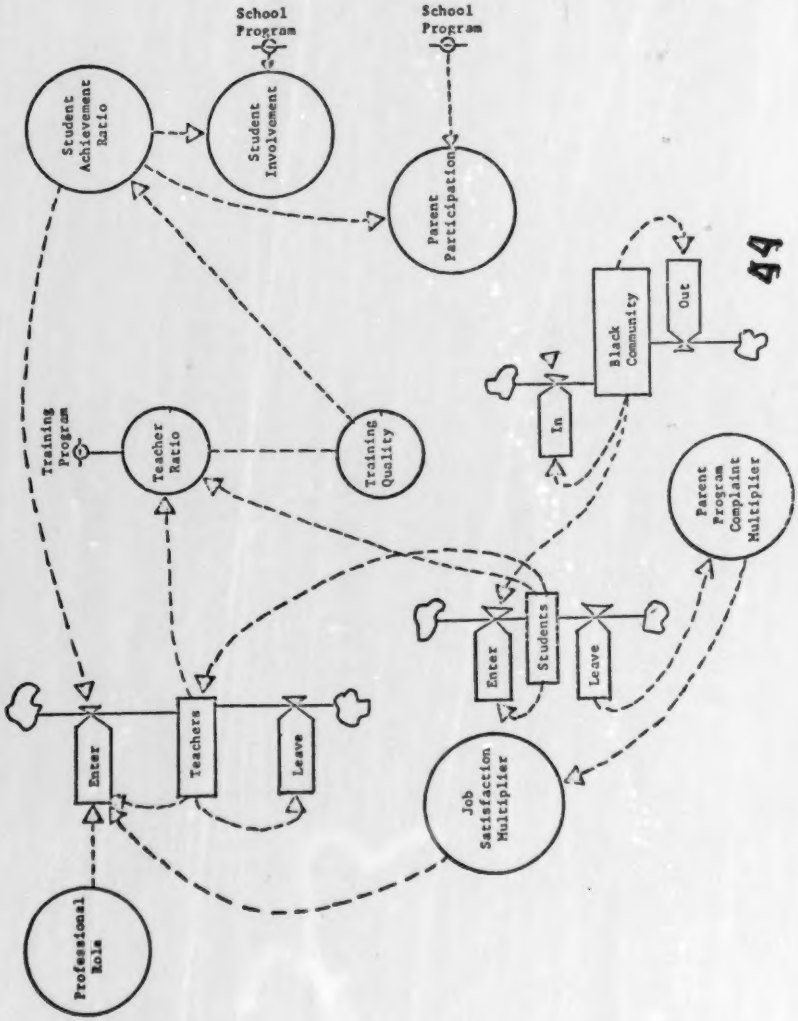
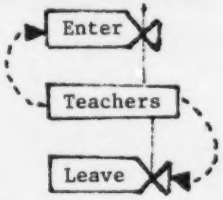


FIGURE 8: DEFINITIONS

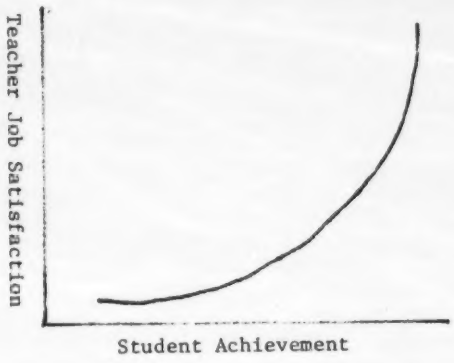
| NAME | TYPE | ACTIVITY DEFINITION |
|---|---|---|
| TEACHERS | LEVEL | Teaching staff at the Middle School |
| JOB SATISFACTION MULTIPLIER | MULTIPLIER | Observed record of teaching staff willingness to remain in the program. |
| TEACHER RATIO | RATIO | Magnitude of teachers enrolled in the school per students enrolled. |
| TRAINING QUALITY | AUX. VARB. | Measured value of training program to teachers |
| STUDENTS | LEVEL | Students enrolled in the Middle School |
| STUDENT INVOLVEMENT | AUX. VARB. | Students involved in operational process of school. |
| STUDENT ACHIEVEMENT RATIO | RATIO | Measured academic and social progress of students in Middle School |
| BLACK COMMUNITY | LEVEL | Parents of black students enrolled in Middle School |
| PARENT PROGRAM COMPLAINTS MULTIPLIER | MULTIPLIER | Observed and recorded complaints made by black parents of program components |
| PARENT PARTICIPATION | AUX. VARB. | Parent participation in the operational process of school |

The rate boxes, valve symbols, indicate the number of teachers entering (or leaving) the Middle School per unit of time. For example, twenty teachers may enter (or leave) the Middle School per academic quarter.

This entry and exit potential is indicated by a broken line ending in an arrowhead drawn from the rectangle, teachers level, to the enter rate and leave rate (valve symbols).

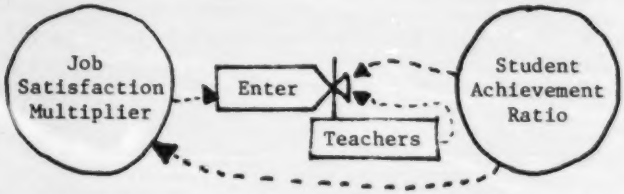



The four variables that generate the teachers level are auxiliary variables, indicated by the large circles. Student achievement enhances teacher job satisfaction. The graph below is the author's guess as to how these two variables relate.

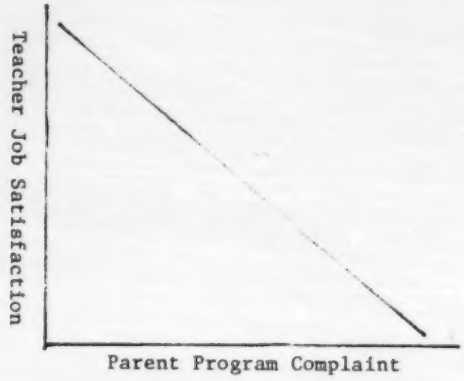



In other words, the greater students achieve (as measured by grades, number of classromm disruptions, dropout rate, etc.), the more satisfied are the teachers. In addition to enhancing

teacher job satisfaction, student achievement encourages more teachers to enter the teachers level. Note that broken lines ending in arrowheads are drawn from the student achievement circle to both the job satisfaction circle and the enter rate box.




Parent complaints about the Middle School program also impact upon teacher job satisfaction as shown in the graph below.




The more complaints registered against the Middle School programs, the more unhappy the teachers will be. On the other hand, teachers will feel a greater sense of accomplishment if there are few parent complaints. Thus the broken line ending in an arrowhead is drawn from the parent program complaint circle to the job satisfaction circle.

The professional role circle in Figure 9 is a self-generating variable. That is, teachers will sense within themselves if their functions in the Middle School serve to increase professionalism. For example, with increased teacher involvement in curriculum development, staff selection and decision-making, teachers will believe that their professional role is being enhanced. While lack of a positively perceived

professional role may not adversely affect the rate that teachers enter or leave the system, it will affect teachers' willingness to participate in activities such as training programs.

The reader is cautioned that the above discussion is a consideration of only one of the three levels in the model shown in Figure 7. The other levels, including their auxiliary variables, are tied into the system in similar fashion. It is readily seen that the system can be expanded to include any number of levels and variables so long as logical inter-relationships are maintained.

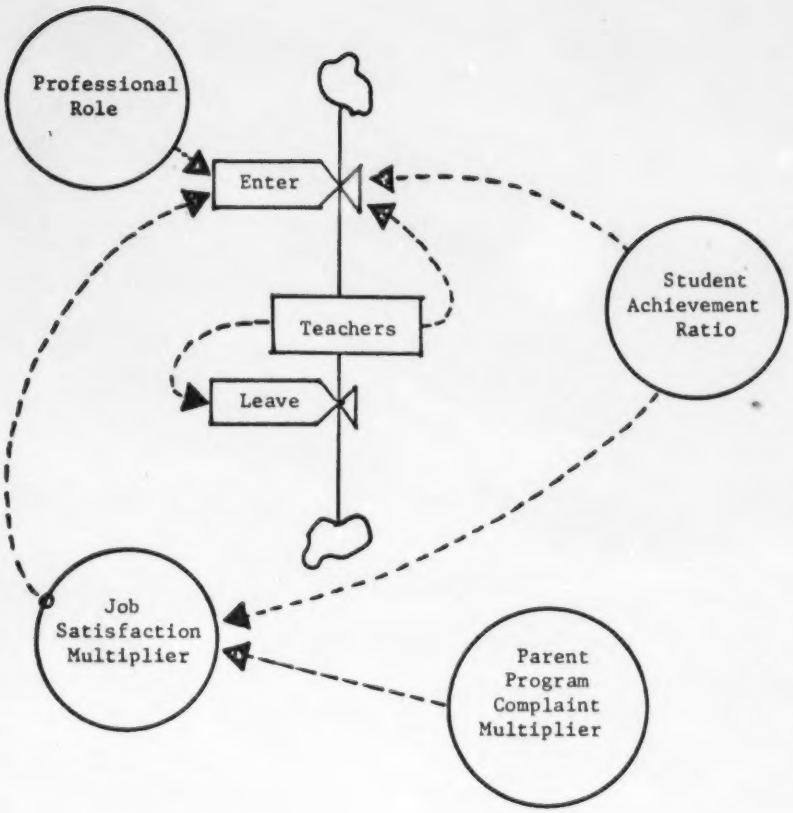
In looking at the model designed for this study, the reader may immediately see that two modifications may be in order. The model contains no level for the majority (white) community. In a study to gather actual data to test the model, it may be necessary to add the white community level. The white community level would interact with the same variables as the black community level. Also the two levels, black community and white community, would interact with each other.

A second consideration may be that of separating the students level into two groups - black students and white students. Again, the interaction with the other system variables would be similar.

This brief introduction to systems analysis is an overview of the topic. It is presented as the conclusion to the previous discussion of modeling. While the reader who has greater interest in systems analysis is referred to the abundance of literature on the topic,[6] it might be noted that systems analysis can be traced to the time just prior to World War II. At that time English physical scientists developed radar. Upon carrying out the assigned task of discovering the operational uses of radar, social scientists came to call the application of radar operational search, for which the term systems analysis is now used. Systems is concerned with synthesizing many related parts or subsystems. Analysis seeks to make careful examination of the independent but interacting phenomena. The meaning and primary mission of systems has been defined by Pfeiffer.

> The systems approach can be regarded as a disciplined way of using specialists in a variety of fields to analyze as precisely as possible sets of activities those inter-relationships are very complicated, and for formulating comprehensive and flexible plans

FIGURE 9: TEACHERS LEVEL



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> on the basis of analysis. The frame of reference is unequivocally the real world. Formal mathematical procedures may or may not be used, but every case represents a basic effort to reconcile objectives and resources, to achieve clearly specified compromises between what we want and what we can expect to get. Indeed, the systems approach concerns itself above all with the nature of decision-making. Intangibles have always played a leading role in the process, and there is no substitute for judgement, the unique contribution of the man shaping major policies. He is always on his own when the chips are down. No one can help him at the moment of decision, when he selects one course of action or another. Before he reaches this stage, the systems approach comes in to provide guidelines and evaluations.[7]

From this definition of systems analysis, Cassel identifies ten basic principles to the systems analysis technique. They are:

1. OBJECTIVES - Preplanned, clear and concise definition of goals.

2. EVALUATION - Preplanned identification and clear description of measures for success, and of acceptable means for determining goal progress.

3. CONSTRAINTS - Preplanned, clear and concise statement of factors which are not matter of concern.

4. ALTERNATIVES - Plausible choices of action for attainment of goals, both in terms of thesis and antithesis, and from both the vantage of the individual and society.

5. OPERATIONAL PLANS - Completion of plans for major subsystems for all alternative choices of actions being considered, and in terms of actual operations.

6. SYNTHESIZING OF SUBSYSTEMS - Coordination of all subsystems into a single integrated effort.

7. SIMULATION - Often it is desirable to construct an operational model as the basis for preliminary evaluation of some aspect of the subsystem or system functioning.

8. DECISION - This is the moment of truth when the single judgment of the responsible individual determines which course of action to pursue for goal attainment.

9. EVALUATION - This involves evaluation and assessment of the effectiveness of choice made in terms of preplanned goals established and the progress being made toward them.

10. ADAPTATION - This entails necessary modification of the choice based on the evaluation, and often involves rejection of the initial decision in whole or in part.[8]

The justification for using such a structured model lies in the need to solve very complex and inter-locking social problems. In arriving at solutions to social problems, decisions must be made by private and public managers and officials. Since the systems approach requires team work effort, costs are high, care should be taken to insure that the job is beyond the capability of a single individual. Make no mistake, systems analysis is not a panacea for attaining the solution to all social problems. In fact the technique is still quite primitive in its successful use in social systems. Hartley called out more than twenty limitations to systems analysis.[9]

Due to the limitations of systems analysis at present, including terminology confusion, costs increase, political barriers, computer errors and personnel shortage, many challenge the method as being dehumanizing. In fact, this is not the case. Having participated in a large scale systems study,[10] the author finds the process to be no more demeaning to a team that the team members permit. Certainly the process has the potential of being over-ordered and risks lock-stepping the individual into a routine not conducive to human betterment. However, since systems analysis helps make it possible

for the individual to better express himself, it acutally extends him and is humanizing.

A few years ago the Seattle School District's total informational system was devoted to the systems approach for the purpose of more efficient planning and program development.[11] To date the system has been evaluated as being successful. In other areas the systems approach has been used to plan detailed arrangements for placements of students to achieve racially desegregated schools.[12]

In concluding this chapter, it is of value to discuss briefly the strengths and weaknesses of the Forrester technique as applied to the present study. Those advantages and disadvantages of the model that are critiqued below hold true for this study.

Barney best describes Urban Dynamics as "an analysis of how the urban system operates and how it can be more efficiently managed. The heart of the model (developed in Urban Dynamics) is the enumberation and description of the multitude of urban conditions which influence migration and economic advancement."[13]

Urban Dynamics has received both praise and strong criticism. Summarized below are statements of critique of Urban Dynamics listing advantages and disadvantages of the urban simulation, and its assumptions.

1. Advantages

   - it simplifies complex urban phenomena
   - it describes basic characteristics of the urban system[14]
   - it shows why urban programs fail[15]
   - it is a step toward a comprehensive and reliable urban simulation model[16]
   - its feedback process reflects ongoing changes

2. Disadvantages

   - it lacks sensitivity analysis and empirical estimation of parameters[17]
   - its evaluative criteria for programs never are explicitly stated[18]

lower economic classes were not consulted for collaberation[19]

It is through such efforts, as this book, that the shortcomings of Urban Dynamics will be corrected. In the meantime, this study contends that the Forrester method deserves an opportunity for further refinement and extension. Already Kadanoff has extended the model to simulate any number of urban areas. His many-city model is the simplest possible generalization of the original Urban Dynamics to include migration between cities.[20] However, these limitations aren't so bad. It seems unfair to demand of the model answers to questions for which social scientists have tried to find solutions for years. The real value of the Forrester model lies in the pressure put upon the scientist to think logically. Cross impacts between inter-relationships within a system must be carefully considered. As for those who argue for open systems considerations by the Forrester technique, this application again falls short. Any consideration of a social system as open (in nature this is the case) makes for a highly complex model. For the scholar not pressed by a public for responsive program analysis, model development for open systems is an appropriate exercise. However, in dealing with current practical realities, more simple systems, closed systems, must be presented.

A final comment finds this study lacking in being able to measure a major variable in desegregation programming. This study does not consider in its design a means for measuring directly the impact of institutional racism[21] as a hindering force in social change. This lacking is not a weakness of the Forrester model. Rather no consideration is made because accurate instruments to measure institutional racism are not available.

## CHAPTER THREE

## FOOTNOTES

1. Jay W. Forrester, Urban Dynamics, The M.I.T. Press, Cambridge, Mass., 1969.

2. Henry S. Dyer, "Can We Measure the Performance of Educational Systems?", NASSP Bulletin (National Association of Secondary School Principals), Vol 54, No. 346, May 1970, p. 98.

3. The bulk of the discussion in the remainder of the chapter is abstracted from Jay W. Forrester's Urban Dynamics, The M.I.T. Press, Cambridge, Mass., 1969. Further footnoting is used only for reference outside this volume.

4. John R. Raser, Simulation and Society, Allyn & Bawn, Inc., Boston, 1969, p. 10.

5. Ross Stranger, "Perceptions, Aspirations, Frustrations and Satisfactions: An Approach to Urban Indicators", The Annals of the American Academy of Political and Social Science, Vol. 388, March 1970, p. 60.

6. Most existing literature is either a discussion of the systems approach in philosophical terms or reports of research conducted using the approach. Few 'how to' books are available. Excellent first reading materials are found in John R. Raser's Simulation and Society, Allyn and Bawn, Inc., Boston, 1969; and C. West Churchman's The Systems Approach, Dell Publishing Co., New York, New York, 1968. Both books have good bibliographies of suggested readings.

7. J. Pfeiffer, New Look at Education - Systems Analysis in Our Schools and Colleges, The Odyssey Press, New York, New York, 1965.

8. Russell N. Cassel, "Systems Analysis in Our Schools and Colleges", Education, Vol. 90, No. 1, September/October 1969, p. 19.

9. H. J. Hartley, "Limitations of Systems Analysis", Education Digest, Vol. 35, October 1969, pp. 29-31.

10. The Seattle Urban Academy program is a unique, exploratory program in which a number of Seattle's inner-city residents and Battelle Memorial Institute personnel jointly designed an inner-city education system based on the community's educational objectives. The program was initiated in late 1968. It continued under the auspices of Battelle until the end of 1971, when the program was assumed by the Urban Academy, a new nonprofit corporation.

11. Forbes Bottomly, "How Seattle Gets Old Concepts Out of Its Systems", Nations Schools, Vol. 80, 1967, pp. 61-62.

12. Robert L. Chartrand, Systems Technology Applied to Social and Community Problems, Spartan Books, New York, New York, 1971, pp. 222-225.

    For further discussions of the applications of systems analysis to social problems, see The Challenge to Systems Analysis, edited by Grace J. Kelleher, John Wiley and Sons, Inc., New York, New York, 1970. Planning students may find useful reading in John Taylor's Instructional Planning Systems, Cambridge University Press, New York, New York, 1971.

13. Gerald Barney, "Understanding Urban Dynamics", AFIPS Conference Proceedings (Fall Joint Computer Conference) Vol. 39, 1971.

14. Ibid., p. 637.

15. Ibid., p. 637

16. Gregory Ingram, "Book Review of Urban Dynamics", AIP Journal, Vol. 36, May 1970, p. 208.

17. Ibid, p. 207. Both Donald Krueckenberg ("Book Review of Urban Dynamics") AIP Journal, Vol. 35, January 1971, p. 353; and Aaron Fleisher ("Book Review of Urban Dynamics") AIP Journal, Vol. 37, January 1971, p. 54, have lodged similar complaints that the model is completely uncalibrated.

18. Ibid., p. 206.

19. Ibid., p. 206.

20. Leo P. Kadanoff, "From Simulation Model to Public Policy", American Scientist, Vol. 60, January/February 1972, pp. 74-79.

21. White racism as used in this document refers to the individual practice by the majority population to treat people of color, black, brown, yellow or red, as inherently inferior in human traits and capabilities. Institutional racism is the organizational realization of individual white racism which serves to foster and perpetuate individual racial bias. An example would be the racist professor in the urban planning department who has low expectation of racial minority students because of race. The department, on the other hand, may have numerous policies or practices that discriminate on the basis of race and thereby enforces the instructor's personal racism.

## CHAPTER FOUR

## PLANNING IN PERSPECTIVE

This final chapter is to allow the author the opportunity to speak to two areas very briefly. First, the relevance of this book to the field of urban planning is discussed. Second, the appropriate role of the black man or woman trained as an urban planner is projected.

> Planning is often described as an abstract process involving the rational definition of objectives, the determination of technical and economic feasibility, and the review of management, cost, scheduling, and technical considerations. The view that planning is an Olympian process, removed from the lively elements of the day-to-day organizational world, is both a naive and potentially harmful view. Similarly, excessive emphasis on highly elaborate quantitative planning techniques is questionable: One must always consider the motives of the contributors and their data.[1]

This book has in fact spoken to each of the above elements given in the definition of planning. Secondly, every attempt has been made to simplify a rather complex activity of the real world. When one attempts to make the complex simple he is, of course, vulnerable to the criticism of artificiality. But such a charge in the case of this book could only mean the point intended for the reader was completely missed. The attempt here has been to demonstrate an approach to problem resolution. If a problem is too complex to be simplified, it probably is not amenable to solution anyway.

In 1970, the author co-directed a seminar that brought educators and urban planners together to discuss mutual areas of concern. The most outstanding finding of the conference was the fact that educators and urban planners have almost no lines of communication. This book, in a modest way, helps to bridge that gap. In speaking to each area expressed in the definition of planning above, it was necessary to make frequent contact with public educators.

Finally, this book relates to urban planning because it deals with a major urban institution - public schools. It is relevant that this document deals with a timely social issue in urban communities around the country - that of public school desegregation.

This book is best justified, if justification is needed, on the grounds that it is a true projection of what black people, trained to become professional urban planners, should be about. Be it in the realm of social or physical planning, the black planner is obligated to give his primary consideration and energy to those most pressing problems of the black urban and rural poor. Failing to fulfill this obligation, for whatever reason, constitutes a renege of duty. The black urban planner has no right (personal, professional, constitutional, natural) to be other than a servant to the black poor. Black planners are advocate planners[2] not by choice but by default due to the nature of the system in which he must function. One advantage, at least, goes to the black planner in this seemingly narrow, depending upon the reader's bias, projection of duty. The black student in training is spared the problem of identity crisis, value conflict and general frustrations of the white student who frequently tries to decide his place in the advocacy role. Advocacy planning is no more or less than coming up with viable schemes to better the constraints which present undesirable barriers to progress. Such is the lifestyle of America's oppressed black poor. In fact, it is sobering that white planners have complicated beyond reasonableness the concept of advocacy; that which comes as a natural survival struggle for the black poor.

Finally, the model designed in Chapter Three can serve as a media of communication between the urban planner and educator. In working the model, the urban planner observes a number of cause and effect relationships. In clearly explaining the assumptions made in arriving at conclusions drawn from the model, the planner can provide the educator with information important to decision-making. Of course, the educator will continue to pressure the planner to refine the assumptions in order to get better answers from the model outputs. Since the educator makes input to the planner's model as a result of parent feedback, a communication system of planners, educators, and community is generated.

The success of this book is assured if it generates but one new thought in the minds of the black ghetto dweller.

## CHAPTER FOUR

## FOOTNOTES

1. L. R. Sayles and M. K. Chandler, Managing Large Systems: Organizations for the Future, Harper and Row, Publishers, New York, 1971, pp. 24-26.

2. Lisa R. Peattie in her article, "Reflections on Advocacy Planning", Journal of the American Institute of Planners, Vol. XXXIV, March 1968, p. 81, summarizes advocacy planning:

> Advocate planners take the view that any plan is the embodiment of particular group interest, and therefore they see it as important that any group which has interests at stake in the planning process should have those interests articulated. In effect, they reject both the notion of a single "best" solution and the notion of a general welfare which such a solution might serve. Planning in this view becomes pluralistic and partisan - in a word, overtly political.

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